

Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form ACO-1

January 2018

Form must be Typed

Form must be Signed

All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

New Well Re-Entry Workover

Oil WSW SWD

Gas DH EOR

OG GSW

CM (Coal Bed Methane)

Cathodic Other (Core, Expl., etc.): _____

If Workover/Re-entry: Old Well Info as follows:

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

Deepening Re-perf. Conv. to EOR Conv. to SWD

Plug Back Liner Conv. to GSW Conv. to Producer

Commingled Permit #: _____

Dual Completion Permit #: _____

SWD Permit #: _____

EOR Permit #: _____

GSW Permit #: _____

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

County: _____ Permit #: _____

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

Confidentiality Requested

Date: _____

Confidential Release Date: _____

Wireline Log Received Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT I II III Approved by: _____ Date: _____

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run:	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

1. Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*
3. Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? Yes No *(If No, fill out Page Three of the ACO-1)*

Date of first Production/Injection or Resumed Production/Injection:	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____			
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
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Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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Form	ACO1 - Well Completion
Operator	Mai Oil Operations, Inc.
Well Name	KAREN KELLER 1
Doc ID	1354599

Tops

Name	Top	Datum
Anhydrite	750	+1150
Heebner	3263	-1363
Toronto	3284	-1384
Brown Lime	3390	-1490
Lansing	3410	-1510
Base Kansas City	3630	-1730
Viola	3706	-1806
Arbuckle	3803	-1903

JAMES C. MUSGROVE

Petroleum Geologist, LLC
212 Main Street
P.O. Box 215
Claflin, KS 67525

Office (620) 588-4250

Res. Claflin (620) 587-3444

Mai Oil Operations
Karen Keller #1
Ne-SW-SW-SE (452'FSL & 2292'FEL)
Section 9-22s-13w
Stafford County, Kansas

Page 1

Dry and Abandoned

Contractor: Southwind Drilling Co. (rig #3)
Commenced: April 3, 2017
Completed: April 10, 2017
Elevation: 1900' K.B., 1898' D.F., 1892' G.L.
Casing program: Surface; 8 5/8" @ 757'
Production, None
Sample: Samples saved and examined 3100' to the Rotary Total Depth.
Drilling time: One (1) foot drilling time recorded and kept 3100' to the Rotary Total Depth.
Measurements: All depths measured from the Kelly Bushing.
Drill Stem Tests: There were four (4) Drill Stem Tests ran by Trilobite Testing Co.
Electric Log: None

<u>Formation</u>	<u>Log Depth</u>	<u>Sub-Sea Datum</u>
Anhydrite	750	+1150
Base Anhydrite	774	+1126
Heebner	3263	-1363
Toronto	3284	-1384
Douglas	3298	-1398
Brown Lime	3390	-1490
Lansing	3410	-1510
Base Kansas City	3630	-1730
Viola	3706	-1806
Simpson Shale	3748	-1848
Arbuckle	3803	-1903
Rotary Total Depth	3821	-1921

(All tops and zones corrected to Electric Log Measurement)

SAMPLE ANALYSIS, SHOWS OF OIL, TESTING DATA, ETC.

TOPEKA SECTION

3166-3196' Limestone, gray, white, finely crystalline, fossiliferous, sparry calcite cement in scattered porosity, no shows.
3205-3210' Limestone, tan, white, finely crystalline, slightly dolomitic, no shows.

3222-3232' Limestone, tan; fossiliferous, poor to fair fossil cast porosity, no shows.

TORONTO SECTION

3284-3294' Limestone, gray white, tan, finely crystalline few fossiliferous, chalky, no shows.

LANSING SECTION

3410-3417' Limestone, white, cream, fossiliferous, chalky, poor visible porosity, no shows.

3424-3432' Limestone, white, sub-oomoldic, chalky, poor visible porosity, black and brown stain, trace of free oil and no odor in fresh samples.

3445-3459' Limestone, tan, oolitic, chalky in part; poor light brown stain; and no odor in fresh samples.

3464-3468' Limestone, white, gray, chalky; fossiliferous in part; no shows.

3475-3483' Limestone, white, gray, oolitic, chalky in part, scattered porosity, light brown stain, weak show of free oil (amber/light) faint odor in fresh samples.

Drill Stem Test #1

3414-3484

Times: 30-30-45-45

Blow: Strong

**Recovery: 30' gas in pipe
90' slightly oil cut muddy water
(5% oil; 35% water; 60% mud)**

**Pressures: ISIP 714 psi
FSIP 721 psi
IFP 23-38 psi
FFP 42-59 psi
HSH 1654-1593 psi**

3496-3513' Limestone, gray; white, sub-oomoldic, to oomoldic; fair oomoldic porosity; (barren).

3534-3542' Limestone, white, cream oomoldic, fair oomoldic porosity, slightly chalky, trace poor brown stain, weak show of free oil and no odor in fresh samples.

3551-3556' Limestone, cream, white, finely few sub-oomoldic, crystalline, oolitic, chalky in part; dark brown to black stain, no free and no odor in fresh samples.

3571-3581' Limestone, white, tan, oomoldic, fair oomoldic porosity, trace brown stain; trace of free oil and questionable odor in fresh samples.

Drill Stem Test #2 **3525-3585**

Times: 30-30-30-30

Blow: Weak (surface)

Recovery: 3' mud

Pressures: ISIP 471 psi
FSIP 230 psi
IFP 18-17 psi
FFP 19-18 psi
HSH 1707-1691 psi

3596-3602' Limestone, tan, buff, finely crystalline, poor to fair vuggy porosity, fair stain and saturation, show of free oil and fair odor in fresh samples.

3626-3630' Limestone, cream, tan, finely crystalline, few fossiliferous, dense, trace black stain, no free oil and no odor in fresh samples.

Drill Stem Test #3 **3586-3630**

Times: 30-30-30-30

Blow: Weak

Recovery: 1' mud, with oil spots in tool

Pressures: ISIP 28 psi
FSIP 26 psi
IFP 23-24 psi
FFP 24-24 psi
HSH 1753-1699 psi

CONGLOMERATE SECTION

3691-3706' Chert; varied colored; plus varied colored shales.

VIOLA SECTION

3706-3720' Chert; white, opaque, dense; poor porosity, black and brown stain; no free oil and no odor in fresh samples.

3720-3748' Chert, white, opaque, boney, black and brown stain, no free oil and no odor in fresh samples.

SIMPSON SECTION

3774-3780' Sand, clear, green tinted, fine to medium grained; sub-rounded, sub-angular, poorly sorted, poor porosity, no shows.

Mai Oil Operations
Karen Keller #1
Ne-SW-SW-SE (452' FSL & 2292'FEL)
Section 9-22s-13w
Stafford County, Kansas

Page 4

ARBUCKLE SECTION

- 3803-3810' Dolomite, tan, brown, finely crystalline, poor visible porosity, dense, trace black stain, no free oil and no odor in fresh samples.
- 3810-3815' Dolomite, tan, buff, finely crystalline, sucrosic, fair inter-crystalline to pinpoint type porosity, black spotty stain, no free oil and faint odor in fresh sample.
- 3815-3821; Dolomite, tan, brown, fine to medium crystalline, fair inter-crystalline to vuggy type porosity, black stain, no free oil, light yellow flurs; and faint odor in fresh samples.

Drill Stem Test #4 3733-3821

Times: 15-15-15-15

Blow: Strong

Recovery: 1116' muddy water

Pressures:

ISIP	1306	psi
FSIP	1305	psi
IFP	84-289	psi
FFP	319-525	psi
HSH	1860-1791	psi

Rotary Total Depth 3821 (-1921)

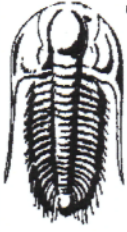
Recommendations:

The Karen Keller #1 was plugged and abandoned at the Rotary Total Depth 3821 (-1921).

Respectfully yours,

James C. Musgrove & Wyatt Urban
James C Musgrove & Wyatt Urban
Petroleum Geologist





TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations Inc.
 8411 Preston Road Suite 800
 Dallas TX 75225+5520
 ATTN: Jim Musgrove

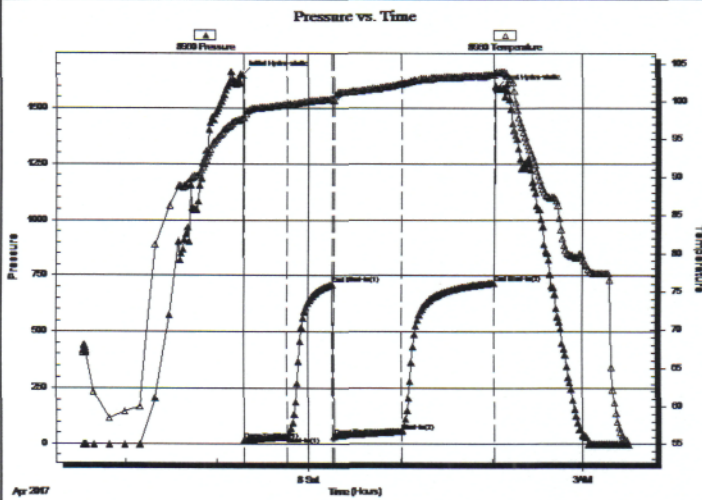
9-22S-13W Stafford,KS
Karen Keller #1
 Job Ticket: 64820 **DST#: 1**
 Test Start: 2017.04.07 @ 21:32:00

GENERAL INFORMATION:

Formation: **LKC A-F**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 23:17:00
 Time Test Ended: 03:30:00
 Interval: **3414.00 ft (KB) To 3484.00 ft (KB) (TVD)**
 Total Depth: 3484.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney
 Unit No: 72
 Reference Elevations: 1900.00 ft (KB)
 1892.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8960 Outside
 Press@RunDepth: 718.21 psig @ 3481.24 ft (KB)
 Start Date: 2017.04.07 End Date: 2017.04.08
 Start Time: 21:32:05 End Time: 03:29:59
 Capacity: 8000.00 psig
 Last Calib.: 2017.04.08
 Time On Btm: 2017.04.07 @ 23:16:30
 Time Off Btm: 2017.04.08 @ 02:03:00

TEST COMMENT: IFP 30 Minutes/ Blow built to BOB in 15 minutes
 ISI 30 Minutes/ No blow back
 FFP 45 Minutes/ Blow built to BOB in 21 minutes
 FSI 60 Minutes/ No blow back



PRESSURE SUMMARY

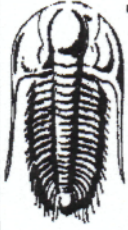
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1649.75	97.85	Initial Hydro-static
1	17.23	97.82	Open To Flow (1)
30	33.47	99.64	Shut-In(1)
59	711.02	100.34	End Shut-In(1)
60	36.01	100.20	Open To Flow (2)
105	56.78	102.43	Shut-In(2)
165	718.21	103.58	End Shut-In(2)
167	1590.59	103.81	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
90.00	OCWM Oil 5% Water 35% Mud 60%	1.26
0.00	30' GIP	0.00

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mai Oil Operations Inc.
8411 Preston Road Suite 800
Dallas TX 75225+5520
ATTN: Jim Musgrove

9-22S-13W Stafford,KS
Karen Keller #1
Job Ticket: 64820 **DST#: 1**
Test Start: 2017.04.07 @ 21:32:00

Tool Information

Drill Pipe:	Length: 3425.00 ft	Diameter: 3.80 inches	Volume: 48.04 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: 48.04 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3414.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	70.24 ft			
Tool Length:	90.24 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut-In Tool	5.00			3399.00	
Hydraulic tool	5.00			3404.00	
Top Packer	5.00			3409.00	
Packer	5.00			3414.00	20.00 Bottom Of Top Packer
Anchor	32.00			3446.00	
Change Over Sub	1.00			3447.00	
Drill Pipe	31.24			3478.24	
Change Over Sub	1.00			3479.24	
Recorder	1.00	8648	Inside	3480.24	
Recorder	1.00	8960	Outside	3481.24	
Bullnose	3.00			3484.24	70.24 Anchor Tool

Total Tool Length: 90.24



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mai Oil Operations Inc.

9-22S-13W Stafford,KS

8411 Preston Road Suite 800
Dallas TX 75225+5520

Karen Keller #1

Job Ticket: 64820

DST#: 1

ATTN: Jim Musgrove

Test Start: 2017.04.07 @ 21:32:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

22000 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.58 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5100.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
90.00	OCWM Oil 5% Water 35% Mud 60%	1.262
0.00	30' GIP	0.000

Total Length: 90.00 ft Total Volume: 1.262 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Recovery Resistivity .345 ohms @ 60 deg

Serial #: 8648

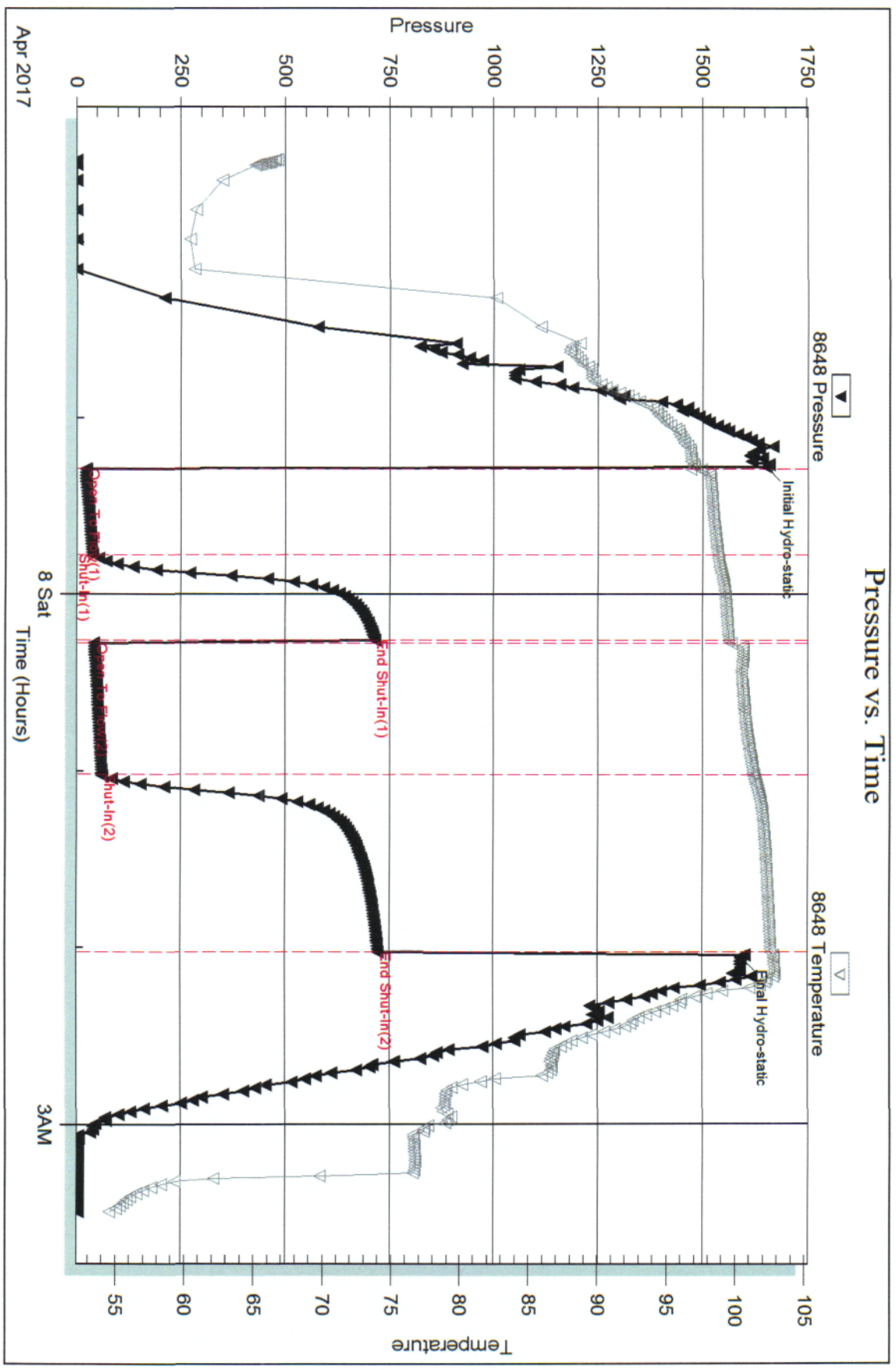
Inside

Mai Oil Operations Inc.

Karen Keller #1

DST Test Number: 1

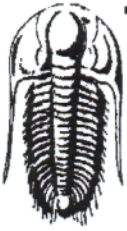
Pressure vs. Time



Tribolite Testing, Inc

Ref. No: 64820

Printed: 2017.04.11 @ 13:58:37



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations Inc.
 8411 Preston Road Suite 800
 Dallas TX 75225+5520
 ATTN: Jim Musgrove

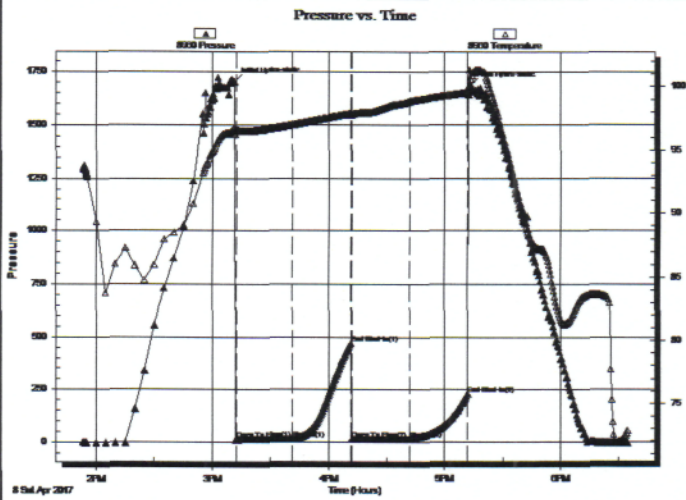
9-22S-13W Stafford,KS
Karen Keller #1
 Job Ticket: 64821 **DST#: 2**
 Test Start: 2017.04.08 @ 13:53:00

GENERAL INFORMATION:

Formation: **LKC H - J**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 15:12:30
 Time Test Ended: 18:34:30
 Interval: **3525.00 ft (KB) To 3585.00 ft (KB) (TVD)**
 Total Depth: 3585.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney
 Unit No: 72
 Reference Elevations: 1900.00 ft (KB)
 1892.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8960 Outside
 Press@RunDepth: 228.86 psig @ 3581.56 ft (KB)
 Start Date: 2017.04.08 End Date: 2017.04.08 Capacity: 8000.00 psig
 Start Time: 13:53:05 End Time: 18:34:29 Last Calib.: 2017.04.08
 Time On Btm: 2017.04.08 @ 15:11:30
 Time Off Btm: 2017.04.08 @ 17:13:30

TEST COMMENT: IFP 30 Minutes Surface blow died in 10 minutes
 ISI 30 Minutes No blow back
 FFP 30 Minutes Dead no blow
 FSI 30 Minutes No blow back



PRESSURE SUMMARY

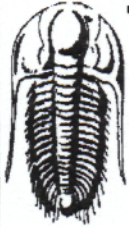
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1703.45	96.75	Initial Hydro-static
1	11.90	96.53	Open To Flow (1)
30	13.12	96.99	Shut-In(1)
60	470.62	97.89	End Shut-In(1)
61	13.87	97.78	Open To Flow (2)
91	14.58	98.83	Shut-In(2)
121	228.86	99.55	End Shut-In(2)
122	1688.68	100.57	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
3.00	Mud 100%	0.04

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mai Oil Operations Inc.

9-22S-13W Stafford,KS

8411 Preston Road Suite 800
Dallas TX 75225+5520

Karen Keller #1

Job Ticket: 64821

DST#: 2

ATTN: Jim Musgrove

Test Start: 2017.04.08 @ 13:53:00

Tool Information

Drill Pipe:	Length: 3509.00 ft	Diameter: 3.80 inches	Volume: 49.22 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 54000.00 lb
			<u>Total Volume: 49.22 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3525.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	59.56 ft			
Tool Length:	87.56 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			3502.00	
Hydraulic tool	5.00			3507.00	
Jars	6.00			3513.00	
Safety Joint	2.00			3515.00	
Top Packer	5.00			3520.00	
Packer	5.00			3525.00	28.00 Bottom Of Top Packer
Anchor	21.00			3546.00	
Change Over Sub	1.00			3547.00	
Drill Pipe	31.56			3578.56	
Change Over Sub	1.00			3579.56	
Recorder	1.00	8648	Inside	3580.56	
Recorder	1.00	8960	Outside	3581.56	
Bullnose	3.00			3584.56	59.56 Anchor Tool

Total Tool Length: 87.56



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mai Oil Operations Inc.

9-22S-13W Stafford,KS

8411 Preston Road Suite 800
Dallas TX 75225+5520

Karen Keller #1

Job Ticket: 64821

DST#: 2

ATTN: Jim Musgrove

Test Start: 2017.04.08 @ 13:53:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.17 in³

Gas Cushion Type:

Gas Cushion Pressure:

psig

Resistivity: ohm.m

Salinity: 5800.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
3.00	Mud 100%	0.042

Total Length: 3.00 ft Total Volume: 0.042 bbl

Num Fluid Samples: 0

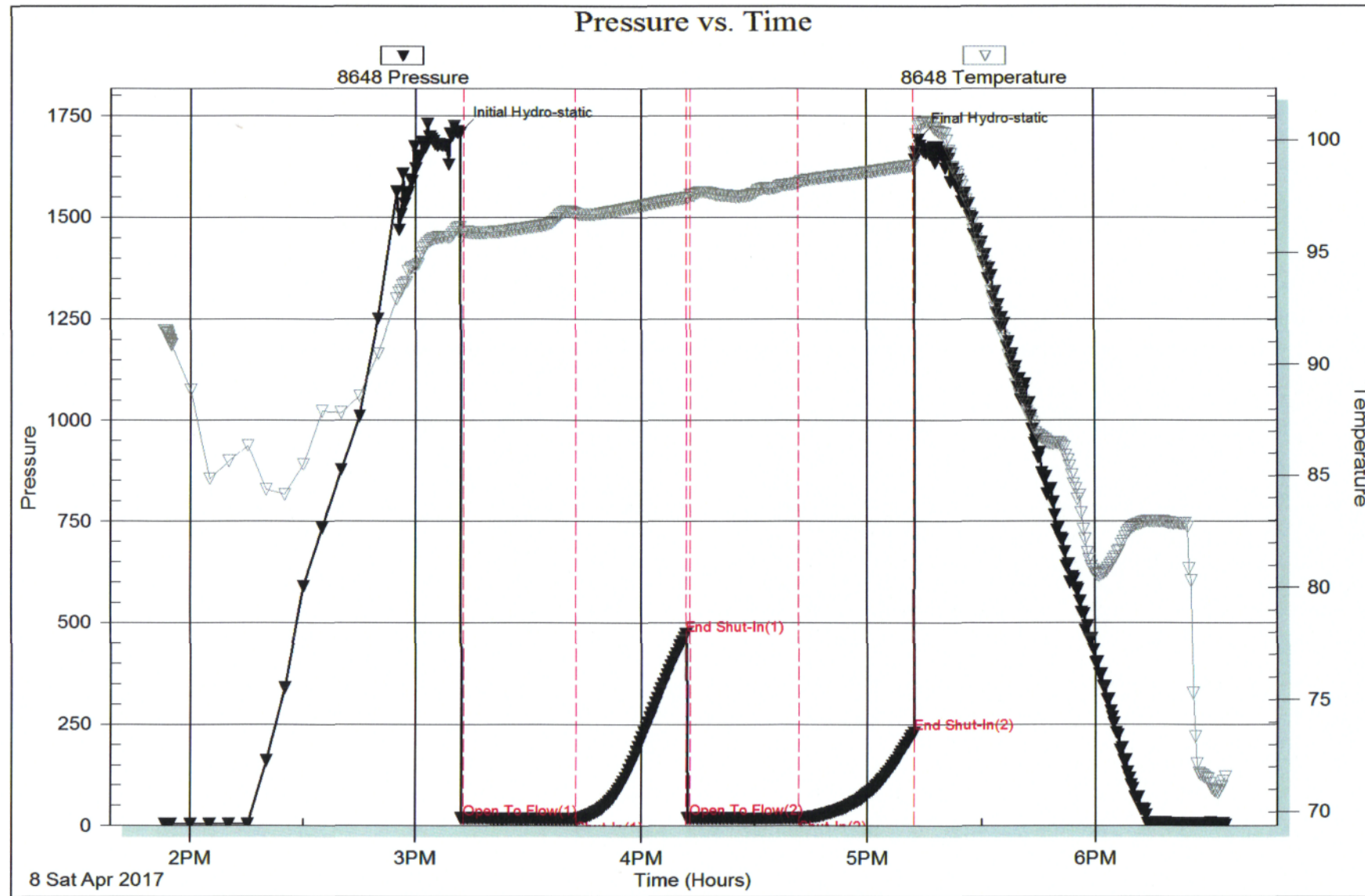
Num Gas Bombs: 0

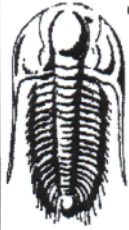
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations Inc.
 8411 Preston Road Suite 800
 Dallas TX 75225+5520
 ATTN: Jim Musgrove

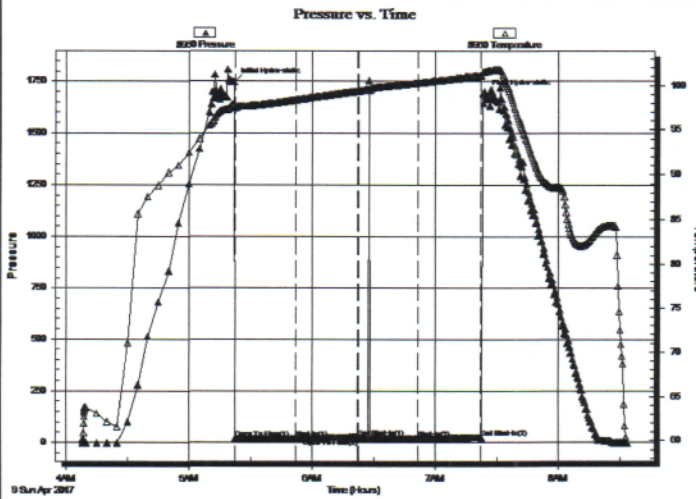
9-22S-13W Stafford,KS
Karen Keller #1
 Job Ticket: 64822 **DST#: 3**
 Test Start: 2017.04.09 @ 04:08:00

GENERAL INFORMATION:

Formation: **LKC K - L**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 05:22:00
 Time Test Ended: 08:33:30
 Interval: **3586.00 ft (KB) To 3630.00 ft (KB) (TVD)**
 Total Depth: 3630.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney
 Unit No: 72
 Reference Elevations: 1900.00 ft (KB)
 1892.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8960 **Outside**
 Press@RunDepth: 22.81 psig @ 3627.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.04.09 End Date: 2017.04.09 Last Calib.: 2017.04.09
 Start Time: 04:08:05 End Time: 08:33:29 Time On Btm: 2017.04.09 @ 05:22:00
 Time Off Btm: 2017.04.09 @ 07:24:30

TEST COMMENT: IFP 30 Minutes Surface blow died in 8 minutes
 ISI 30 Minutes No blow back
 FFP 30 Minutes Dead no blow / Flush tool no help
 FSI 30 Minutes No blow back



PRESSURE SUMMARY

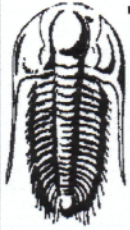
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1748.56	97.88	Initial Hydro-static
1	17.75	97.48	Open To Flow (1)
30	18.53	98.36	Shut-In(1)
60	24.76	99.35	End Shut-In(1)
61	17.63	99.36	Open To Flow (2)
90	19.23	100.27	Shut-In(2)
120	22.81	101.06	End Shut-In(2)
123	1688.67	101.56	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1.00	Mud w/oil spots in tool/Mud 100%	0.01

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mai Oil Operations Inc.

9-22S-13W Stafford,KS

8411 Preston Road Suite 800
Dallas TX 75225+5520

Karen Keller #1

Job Ticket: 64822

DST#: 3

ATTN: Jim Musgrove

Test Start: 2017.04.09 @ 04:08:00

Tool Information

Drill Pipe:	Length: 3581.00 ft	Diameter: 3.80 inches	Volume: 50.23 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 68000.00 lb
			<u>Total Volume: 50.23 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3586.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	44.00 ft			
Tool Length:	64.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			3571.00	
Hydraulic tool	5.00			3576.00	
Top Packer	5.00			3581.00	
Packer	5.00			3586.00	20.00 Bottom Of Top Packer
Anchor	39.00			3625.00	
Recorder	1.00	8648	Inside	3626.00	
Recorder	1.00	8960	Outside	3627.00	
Bullnose	3.00			3630.00	44.00 Anchor Tool

Total Tool Length: 64.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mai Oil Operations Inc.

9-22S-13W Stafford,KS

8411 Preston Road Suite 800
Dallas TX 75225+5520

Karen Keller #1

Job Ticket: 64822

DST#: 3

ATTN: Jim Musgrove

Test Start: 2017.04.09 @ 04:08:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.18 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5800.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1.00	Mud w/oil spots in tool/Mud 100%	0.014

Total Length: 1.00 ft Total Volume: 0.014 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

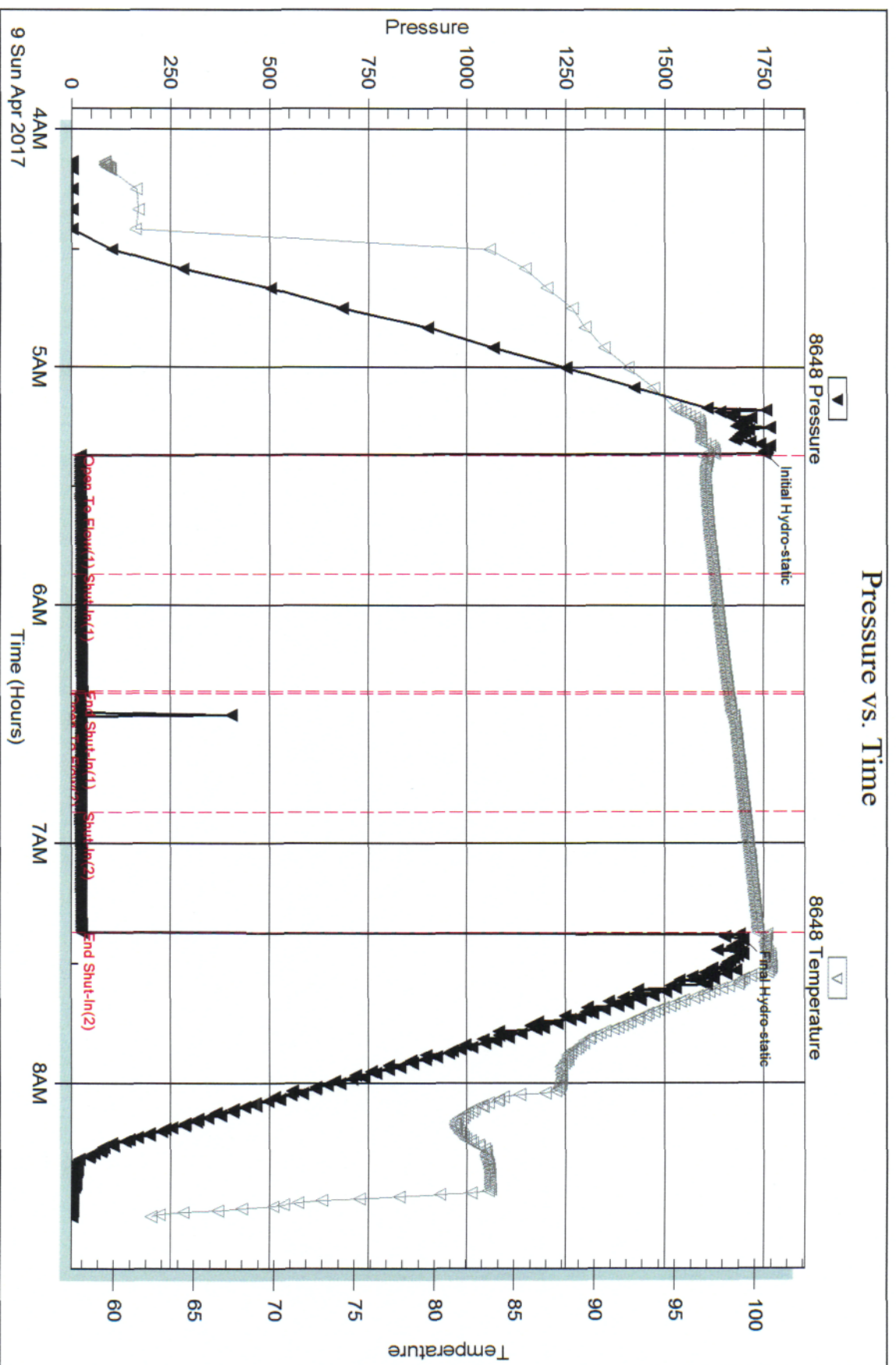
Recovery Comments:

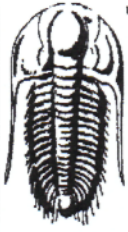
Serial #: 8648

Inside Mai Oil Operations Inc.

Karen Keller #1

DST Test Number: 3





TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations Inc.

9-22S-13W Stafford,KS

8411 Preston Road Suite 800
Dallas TX 75225+5520

Karen Keller #1

Job Ticket: 64823

DST#: 4

ATTN: Jim Musgrove

Test Start: 2017.04.10 @ 01:02:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:25:00

Time Test Ended: 05:27:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: 3733.00 ft (KB) To 3821.00 ft (KB) (TVD)

Reference Elevations: 1900.00 ft (KB)

Total Depth: 3821.00 ft (KB) (TVD)

1892.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8960

Outside

Press@RunDepth: 1302.52 psig @ 3818.21 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.04.10

End Date: 2017.04.10

Last Calib.: 2017.04.10

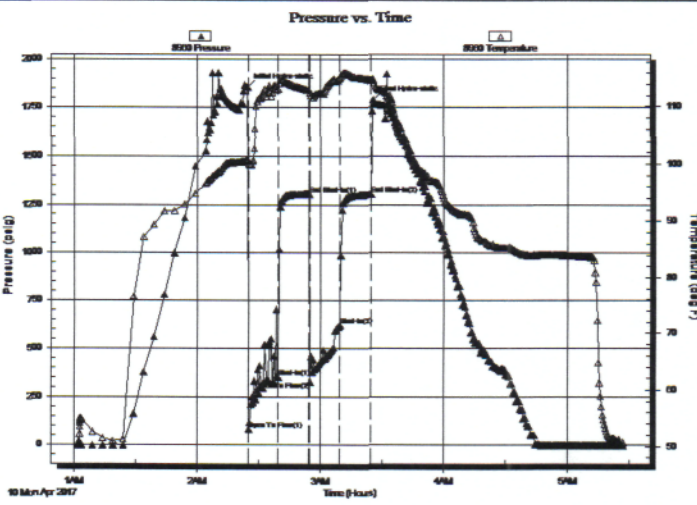
Start Time: 01:02:05

End Time: 05:26:59

Time On Btm: 2017.04.10 @ 02:24:30

Time Off Btm: 2017.04.10 @ 03:25:30

TEST COMMENT: IFP 15 Minutes Blow built to BOB in 2 1/2 minutes
ISI 15 Minutes No blow back
FFP 15 Minutes Blow built to BOB in 2 1/2 minutes
FSI 15 Minutes No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1855.18	100.66	Initial Hydro-static
1	81.17	99.99	Open To Flow (1)
15	349.63	113.14	Shut-In(1)
30	1304.46	112.93	End Shut-In(1)
31	328.44	112.45	Open To Flow (2)
45	620.83	115.19	Shut-In(2)
60	1302.52	114.80	End Shut-In(2)
61	1789.64	114.80	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1116.00	Muddy Water/ Mud 30% Water 70%	15.65

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mai Oil Operations Inc.

9-22S-13W Stafford,KS

8411 Preston Road Suite 800
Dallas TX 75225+5520

Karen Keller #1

Job Ticket: 64823

DST#: 4

ATTN: Jim Musgrove

Test Start: 2017.04.10 @ 01:02:00

Tool Information

Drill Pipe:	Length: 3738.00 ft	Diameter: 3.80 inches	Volume: 52.43 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 64000.00 lb
			<u>Total Volume: 52.43 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3733.00 ft			Final 56000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	88.21 ft			
Tool Length:	108.21 ft			
Number of Packers:	2	Diameter: 6.75 inches		
Tool Comments:				

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			3718.00	
Hydraulic tool	5.00			3723.00	
Top Packer	5.00			3728.00	
Packer	5.00			3733.00	20.00 Bottom Of Top Packer
Anchor	18.00			3751.00	
Change Over Sub	1.00			3752.00	
Drill Pipe	63.21			3815.21	
Change Over Sub	1.00			3816.21	
Recorder	1.00	8648	Inside	3817.21	
Recorder	1.00	8960	Outside	3818.21	
Bullnose	3.00			3821.21	88.21 Anchor Tool

Total Tool Length: 108.21



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mai Oil Operations Inc.

9-22S-13W Stafford,KS

8411 Preston Road Suite 800
Dallas TX 75225+5520

Karen Keller #1

Job Ticket: 64823

DST#: 4

ATTN: Jim Musgrove

Test Start: 2017.04.10 @ 01:02:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

19000 ppm

Viscosity: 59.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.18 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6300.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1116.00	Muddy Water/ Mud 30% Water 70%	15.655

Total Length: 1116.00 ft Total Volume: 15.655 bbl

Num Fluid Samples: 0

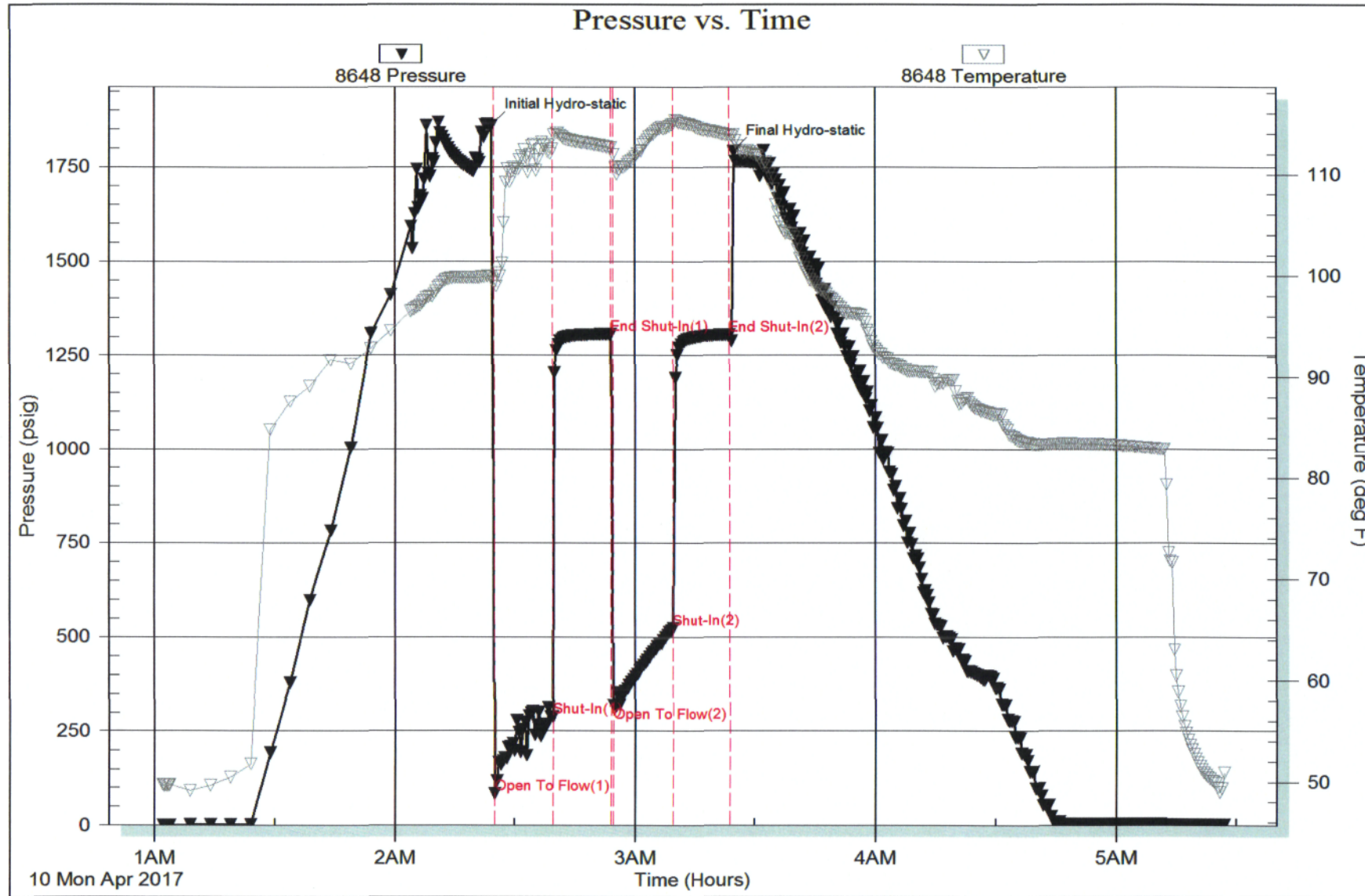
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Recovery Resistivity .514 ohms @ 48 deg



QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 139

Date	4-4-17	Sec.	9	Twp.	02	Range	13	County	Stafford	State	KS	On Location		Finish	9:30am
								Location 2812 K-19 13 1/2w N11+0							

Lease	Karen Keller	Well No.	1	Owner	To Quality Oilwell Cementing, Inc.
Contractor	Southwind #3	You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.			
Type Job	Surface				
Hole Size	12 1/4	T.D.	257	Charge To	Mat Oil
Csg.	8 5/8	Depth	257	Street	
Tbg. Size		Depth		City State	
Tool		Depth		The above was done to satisfaction and supervision of owner agent or contractor.	
Cement Left in Csg.	20	Shoe Joint		Cement Amount Ordered 450 6/40 4/6 2/6 1/2 #10	
Meas Line		Displace	46 1/2 BCL		

EQUIPMENT

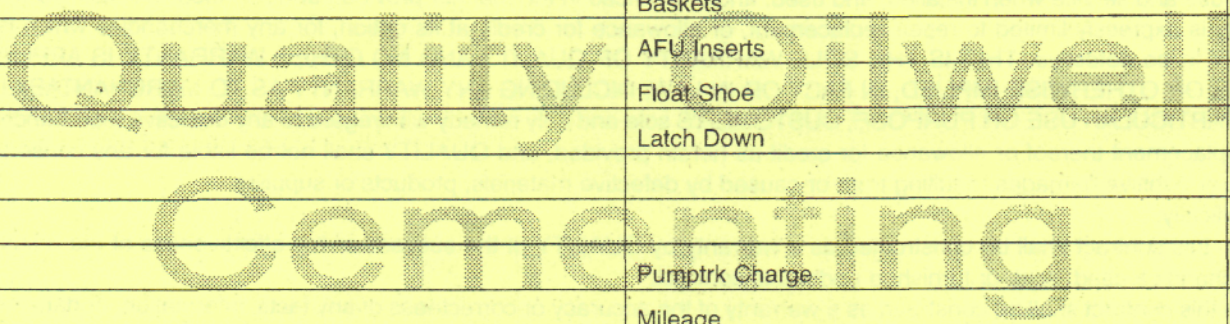
Pumptrk	18	No.	Cementer		Common
			Helper		Poz. Mix
Bulktrk		No.	Driver		Gel.
			Driver		Calcium
Bulktrk	19	No.	Driver		
			Driver		

JOB SERVICES & REMARKS

Remarks:	Salt
Rat Hole	Flowseal
Mouse Hole	Kol-Seal
Centralizers	Mud CLR 48
Baskets	CFL-117 or CD110 CAF 38
D/V or Port Collar	Sand
8 5/8 on bottom Est. Circulation	Handling
Mix 4 50% Displace Plug	Mileage

FLOAT EQUIPMENT

Cement Circulation	Guide Shoe	8 5/8 Rubber Plug
	Centralizer	
	Baskets	
	AFU Inserts	
	Float Shoe	
	Latch Down	



	Pumptrk Charge	
	Mileage	
		Tax
		Discount
		Total Charge

X Signature *Joy Driver*

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 053

Date	Sec.	Twp.	Range	County	State	On Location	Finish
4-24-17	26	14	13	Russell	KS		2:30PM

Location *4 corners Rd and Pioneer, 3 1/2 E, S n 2*

Lease <i>Letsch</i>	Well No. <i>18</i>	Owner To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.
Contractor <i>Southwend 3</i>		
Type Job <i>Plug</i>		
Hole Size <i>7 7/8</i>	T.D. <i>3209</i>	Charge To <i>Ma Oil</i>
Csg.	Depth	Street
Tbg. Size	Depth	City State
Tool	Depth	The above was done to satisfaction and supervision of owner agent or contractor.
Cement Left in Csg.	Shoe Joint	Cement Amount Ordered <i>225sx 6 1/4 4% gel, 1/4 Flow</i>
Meas Line	Displace	

EQUIPMENT

		Common
Pumptrk <i>16</i>	No. Cementer Helper <i>Travis</i>	Poz. Mix
Bulktrk <i>3</i>	No. Driver Driver <i>Doug</i>	Gel.
Bulktrk <i>Pn</i>	No. Driver Driver <i>Jordan</i>	Calcium

JOB SERVICES & REMARKS

Remarks:	Hulls
Rat Hole	Salt
Mouse Hole	Flowseal
Centralizers	Kol-Seal
Baskets	Mud CLR 48
D/V or Port Collar	CFL-117 or CD110 CAF 38
<i>50sx at 3175</i>	Sand
	Handling
<i>50sx at 700</i>	Mileage
	FLOAT EQUIPMENT
<i>75sx at 400</i>	Guide Shoe
	Centralizer
<i>10sx at 40 with wood plug</i>	Baskets
	AFU Inserts
<i>30sx Rat</i>	Float Shoe
	Latch Down
	<i>1 wood plug</i>
	Pumptrk Charge
	Mileage

X Signature *Jay Kree*

Tax
Discount
Total Charge